

Appl. No. 10/824,466
Amendment dated: March 6, 2006
Reply to OA of: November 7, 2005

REMARKS

This is in response to the Official Action of November 17, 2005. Applicants have amended the claims in order to more precisely define the scope of the present invention, taking into consideration the outstanding Official Action.

Applicants would like to begin by respectfully requesting that the next Official Action acknowledge the claim for foreign priority under 35 U.S.C. §119(a)-(d) or (f) and receipt of the certified copy of the priority document. Applicants also respectfully request that the next Official Action indicate whether the formal drawings filed April 15, 2004 are accepted.

Numerous translation and typographical errors appear in the originally filed claims, and therefore Applicants have made every effort to correct these errors and more precisely define the invention claimed in the instant application. By way of example, Applicants note the following changes which have been made throughout the claims:

- “foam” has been changed to “foamed sheet”
- “in atmosphere” has been changed to “under one atmospheric pressure”
- “raw material” has been changed to “thermoplastic composite material”

Additional minor typographical and grammatical corrections have been made which do not affect the scope of the present invention.

Applicants respectfully submit that no new matter is introduced by the amendments to the claims. As stated above, the amendments are aimed at correcting the translation and typographical errors which existed in the originally filed application. Accordingly, Applicants respectfully submit that all claims now pending in the present application are in full compliance with the requirements of 35 U.S.C. §112.

Applicants also submit herewith a substitute Specification. The substitute Specification replaces the originally filed Specification and corrects typographical and grammatical errors that appear throughout the originally filed Specification. The

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changes made to the Specification are consistent with the amendments made to the claims. Applicants respectfully submit that the substitute Specification introduces no new matter.

The rejection of claims 1-23 under 35 U.S.C. §112, first paragraph for failing to comply with the enablement requirement has been carefully considered but is most respectfully traversed in light of the amendments to the claims and following comments.

The Official Action urges that claims 1 and 12 recite adding different additive but the disclosure is such that undue experimentation would be required of one of ordinary skill in the art in order to determine the additive to be used. Accordingly, Applicants have amended the claims to replace the phrase "different additive" with the word "additive". Applicants respectfully submit that one of ordinary skill in the art of manufacturing foam would understand what types of additives are commonly used. Further, Applicants note that claims 10 and 22 recite that additives may include a coloring agent, a calcium carbonate and wood chips. Page 8 of the specification as originally filed also describes additives that may be used in the present invention. Therefore, in light of the amendment to the claims, Applicants respectfully submit that claims 1 and 12 are fully enabled by the specification and therefore request that this rejection be withdrawn.

The rejection of claims 1-23 under 35 U.S.C. §112, second paragraph as being indefinite has been carefully considered but is most respectfully traversed in light of the amendments to the claims and the following comments.

The Official Action urges that "in atmosphere" in the preamble of claims 1 and 12 is vague. Accordingly, Applicants have amended the claims such that the preamble of claim 1 and 12 now recites "under one atmospheric pressure". Applicants respectfully submit that these portions of the claims are now in compliance with 35 U.S.C. §112, second paragraph.

The Official Action urges that one of ordinary skill in the art would be unable to determine the metes and bounds of the claims due to the phrase "adding different additive" in claims 1 and 12. Accordingly, Applicants have amended the claims such

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the claims such that claims 1 and 12 now recite "adding additive". Further, Applicants note the additives recited in claim 10 and 22 and the disclosure on page 8 of the originally filed specification. Applicants respectfully submit that these portions of the claims are now in compliance with 35 U.S.C. §112, second paragraph.

The Official Action urges that it is unclear what "normal pressure" in claims 1 and 12 encompasses. Accordingly, Applicants have amended the claims 1 and 12 such that "normal pressure" has been replaced with "under one atmospheric pressure". Applicants respectfully submit that these portions of the claims are now in compliance with 35 U.S.C. §112, second paragraph.

The Official Action urges that, in claims 1 and 12, it is unclear what the following phrases mean:

- "weighing the sheet to an oven"
- "cutting the selected weight of the sheet members to a mold"
- cutting the blank to an oven to foam in normal pressure"

Applicants note that each of these phrases have been deleted from the claims. Therefore, Applicants respectfully submit that the §112, second paragraph rejections of these portions of the claims are moot.

The Official Action urges that the final clause of claim 1 states that a continuous foam is produced, but a prior clause requires cutting such that the foam would appear to no longer be continuous. Applicants note that the cutting step previously recited in claim 1 has been removed, and therefore respectfully submit that this rejection is moot.

Finally, the Official Action urges that claims 2, 6, 7, 9, 11, 13, 17 and 18 use improper Markush terminology. Applicants have amended the claims to correct this issue. Applicants respectfully submit that these portions of the claims are now in compliance with 35 U.S.C. §112, second paragraph.

In light of all of these amendments, Applicants respectfully submit that the claims are now in full compliance with the requirements of 35 U.S.C. §112.

Applicants note that the Official Action has not set forth any prior art rejections, but has listed three references on the PTO Form-892. These references are Hosoda

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et al. (US Pat. No. 3,812,225), Boulte (US Pat. No. 4,242,464) and DeMello et al. (US Pat. No. 5,788,889).

Applicants would like to make the following comments regarding the present invention.

In general, foam materials are classified as rubber based foam material and a plastic foam material depending on the substrates of the foam materials. Applications of the rubber based foam material are different from that of the plastic based foam material due to different properties thereof. For example, ethylene vinyl acetate (EVA) or a mixture of EVA and polyethylene (PE) is typically used as the substrate in the foaming process of manufacturing a plastic foam material, the manufactured plastic foam material has advantages of being subject to cold-molding or hot-molding to form products having complicated shape, simple foaming recipe and easy coloring. For example, many consumer products such as shoes, mats or the like are made from the plastic foam material. However, the disadvantages of the plastic foam material are poor elasticity and poor slip resistance. A rubber material such as a mixture of polyvinyl chloride (PVC) and acrylonitrile butadiene rubber (NBR) is typically used as the substrate in the process of manufacturing a rubber foam material under one atmospheric pressure, the manufactured rubber foam material doesn't have the disadvantages associated with the plastic foam material, but has improved weather-proof and physical properties. As such, the rubber foam material is often used as material in manufacturing buoyant devices, pads or the like. However, the recipe of the rubber foam compound are relatively complex, and the dust generated during the manufacturing process will easily cause environmental pollution. In addition, the rubber foam material has the disadvantages of being difficult of post-molding to form products having complicated shape and being difficult of recycling the waste material. Thus, the rubber foam material are gradually banned in use due to environmental pollution caused by PVC.

One object of this application is to provide a method of manufacturing continuous foamed sheet from a thermoplastic elastomeric material under one atmospheric

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pressure. The method comprises the steps of using thermoplastic elastomer as a substrate, adding additives, foaming agent, and crosslinking agent into the substrate to form a thermoplastic elastomeric composite, kneading and rolling the thermoplastic elastomeric composite for forming a continuous sheet by means of a conventional rubber continuous foaming device, conveying the continuous sheet to an oven, enabling the continuous sheet to be baked in the oven and to foam under the one atmospheric pressure, and cooling the continuous sheet foamed under the one atmospheric pressure to produce the continuous foamed sheet. Another object of this application, after kneading and rolling the thermoplastic elastomeric composite as mentioned above, further comprises the steps of cutting the continuous sheet into a plurality of sheets with a predetermined size, stacking a predetermined number of sheets in a heat mold for hot mold pressing and obtaining a molded block, conveying the molded block to an oven, enabling the molded block to be baked in the oven and to foam under the one atmospheric pressure, and cooling the block foamed under the one atmospheric pressure to produce a foamed block having a predetermined shape. As such, it is possible of manufacturing a foamed block having a predetermined shape from the thermoplastic elastomeric material under the normal pressure (i.e. one atmospheric pressure) without having to greatly modifying the prior manufacturing processes.

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In view of the above comments and further amendments to the claims, favorable reconsideration and allowance of all of the claims now present in the application are most respectfully requested.

Respectfully submitted,

BACON & THOMAS, PLLC

By: 

Scott A. Bralton
Registration No. 55,020

625 Slaters Lane, Fourth Floor
Alexandria, Virginia 22314
Phone: (703) 683-0500
Facsimile: (703) 683-1080

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